

NAME _____

ROLLNO _____

2008 ANNA UNIVERSITY
B.E/B.TECH EIGHTH SEMESTER DEGREE EXAMINATIONS
SATELLITE COMMUNICATION
(ELECTRONICS&COMMUNICATION ENGINEERING)

APRIL/MAY- 2008

TIME-3HOUR
MARKS-100

ANSWER ALL QUESTIONS

PART A [10*2=20]

1. List out the frequency bands used for satellite services.
2. State Kepler's second law of planetary motion.
3. What is meant by momentum wheel stabilisation?
4. What are geostationary satellites?
5. What is meant by input back off of a transponder?
6. Give the formulae to compute the uplink carrier to noise ratio.
7. What are the limitations of FDMA-satellite access?
8. Distinguish between pre-assigned and demand-assigned TDMA satellite access.
9. Give the applications of satellites.
10. What are the various compression standards used in satellite applications?

PART B [5 *6=80]

11. (a) What are orbital elements? Derive the six orbital elements of satellite from Newton's law of motion.
Or
(b) How are the satellites positions estimated using the sub-satellite points?
12. (a) What are look angles and derive the expressions for azimuth and elevation? (16)
Or
(b) With a neat block diagram, explain the attitude and orbit control system present in the space segment.
13. (a) With a neat sketch, explain the power budget for a satellite link considering back off and rain fade margin
Or
(b) How does the system noise temperature affect the performance? Derive the expression for overall system noise temperature at the receiving earth station.
14. (a) With a neat block diagram, explain the functioning of a SPADE system.
Or
(b) Explain the TDMA burst and frame structure of satellite system. Draw the necessary diagrams.
15. (a) In detail, give an account of various compression standards used in the satellite context.
Or
(b) What is meant by DTH? What are the design issues to be considered for launching DTH systems?